ABSTRACT

The invention provides granular secondary particles of a lithium-manganese composite oxide which are granular secondary particles made up of aggregated crystalline primary particles of a lithium-manganese composite oxide and have many micrometer-size open voids therein, the open voids having an average diameter in the range of from 0.5 to 3 μm and the total volume of the open voids being in the range of from 3 to 20 vol.% on average based on the total volume of the granules. These particles are suitable for use as a constituent material for non-aqueous electrolyte secondary batteries showing high-output characteristics.

The invention further provides a process for producing the granular secondary particles of a lithium-manganese composite oxide which includes spray-drying a slurry prepared by dispersing a fine powder of a manganese oxide, a lithium source, an optional compound containing at least one element selected from Al, Co, Ni, Cr, Fe, and Mg, and an agent for open-void formation to thereby granulate the slurry and then calcining the granules at a temperature of from 700 to 900°C.